What Is Claimed Is:

1. A fiber device, comprising:

a sleeve having an elongated tubular body with an input terminal and an output terminal;

an input fiber ferrule placed in said sleeve at said input terminal;

a plurality of pump fibers bundled together at one fiber terminals by said input fiber ferrule to form a pump fiber bundle, wherein end facets of said bundled fiber terminals are polished to form an optical pump coupling surface for outputting pump light from said pump fibers;

an output fiber ferrule placed in said sleeve at said output terminal;

a double-clad fiber having a fiber core, an inner cladding layer surrounding said fiber core, and an outer cladding layer surrounding said inner cladding layer, said double-clad fiber further including a pump-receiving terminal coupled to said output fiber ferrule to receive said pump light into said inner cladding layer; and

a lens disposed in said sleeve between said input and said output fiber ferrules to image said optical pump coupling surface onto said pump-receiving terminal, wherein

said lens has a numerical aperture not greater than a numerical aperture of said inner cladding layer.

2. The device as in claim 1, wherein said pump-receiving terminal has an end facet that forms an acute angle with respect to a plane perpendicular to a longitudinal direction of said double-clad fiber.

3. The device as in claim 2, wherein said lens includes an optical output surface facing said pump-receiving terminal which is substantially parallel to said end facet of said pump-receiving terminal.

4. The device as in claim 1, wherein a center of said pump fibers, a center of said lens, and said fiber core of said double-clad fiber are substantially aligned along an optic axis of said lens.

5. The device as in claim 1, wherein exteriors of said input and said output fiber ferrules, and said lens conform to an interior of said sleeve.

6. The device as in claim 1, wherein said lens includes a GRIN lens.

7. The device as in claim 1, wherein said lens is configured to couple said pump light to said pump-receiving terminal with a beam spot not greater than a spatial extent of said inner cladding layer.

8. The device as in claim 1, wherein said sleeve includes a slit formed from said input terminal to said output terminal along a longitudinal direction of said sleeve.

9. The device as in claim 1, wherein said sleeve is formed of Zorconia or Phosphor Bronze.

10. The device as in claim 1, wherein each fiber ferrule includes a glass, quartz, a metal, or a ceramic.

11. The device as in claim 1, further comprising a plurality of lasers respectively coupled to said pump fibers to produce light into each pump fiber.

12. The device as in claim 11, wherein said double-clad fiber includes a fiber loop in which said fiber core is doped with active ions to produce optical gain.

13. The device as in claim 12, further comprising:

a first set of wavelength-selective reflectors formed in said double-clad fiber between said pump-receiving terminal and said fiber loop, each reflector operable to reflect light at a selected wavelength while transmitting light at other wavelengths; and

a second set of wavelength-selective reflectors formed in said double-clad fiber on a side of said fiber loop opposite to said first set of wavelength-selective reflectors, each reflector operable to reflect light at a selected wavelength while transmitting light at other wavelengths.

14. The device as in claim 12, further comprising:

a first set of wavelength-selective reflectors formed in said double-clad fiber between said pump-receiving terminal and said fiber loop, each reflector operable to reflect light at a selected wavelength while transmitting light at other wavelengths;

a broadband reflector formed in said double-clad fiber on a side of said fiber loop opposite to said first set of wavelength-selective reflectors and operable to reflect each selected wavelength of each reflector in sad first set of wavelength-selective reflectors; and

an optical coupler coupled between said broadband reflector and said fiber loop to produce an optical output at a selected laser wavelength.

15. A fiber device, comprising:

a sleeve having an elongated tubular body with a cylindrical interior;

an input fiber ferrule having a cylindrical exterior substantially conforming to said cylindrical interior of said sleeve and placed within said sleeve;

a plurality of pump fibers having fiber terminals bundled together by said input fiber ferrule to form a pump fiber bundle to deliver pump light into said sleeve;

an output fiber ferrule having a cylindrical exterior substantially conforming to said cylindrical interior of said sleeve and placed within said sleeve and spaced from said input fiber ferrule;

a double-clad fiber having a fiber core, an inner cladding layer surrounding said fiber core, and an outer cladding layer surrounding said inner cladding layer, and engaged to said output fiber ferrule to receive said pump light into said inner cladding layer; and

a lens disposed in said sleeve between said input and said output fiber ferrules to have a lens optic axis

substantially aligned with a center of said pump fibers and said fiber core of said double-clad fiber, wherein said lens has a numerical aperture not greater than a numerical aperture of said inner cladding layer.

16. The device as in claim 15, wherein said lens is spaced from said input and said output fiber ferrules to image end facets of said pump fibers to an end facet of said double-clad fiber.

17. The device as in claim 15, wherein said lens has an output lens surface facing said output fiber ferrule that is parallel to an end facet of said double-clad fiber, wherein both said output lens surface and said end facet form an acute angle with respect to a plane substantially perpendicular to said lens optic axis.

18. A method, comprising:

using an input fiber ferrule to hold a plurality of pump fibers as a pump fiber bundle to respectively receive pump beams with said pump fibers;

inserting said input fiber ferrule into a tubular sleeve to direct said pump beams along said sleeve;

inserting a lens into said tubular sleeve at a selected position to focus said pump beams to an imaging position along said sleeve;

using an output fiber ferrule to hold a double-clad fiber; and

inserting said output fiber ferrule into said tubular sleeve to place one end facet of said double-clad fiber in said imaging position to receive said focused pump beams.

19. The method as in claim 18, wherein said double-clad fiber having a fiber core, an inner cladding layer surrounding said fiber core, and an outer cladding layer surrounding said inner cladding layer, and wherein said lens has a numerical aperture not greater than a numerical aperture of said inner cladding layer.

20. The method as in claim 18, wherein said lens has an output lens surface facing said output fiber ferrule that is parallel to said end facet of said double-clad fiber, wherein both said output lens surface and said end facet form an acute angle with respect to a plane substantially perpendicular to a lens optic axis of said lens to reduce an offset of said focused pump beams on said end facet.